

FEATURES

·BROAD BAND INTERNALLY MATCHED HEMT

·HIGH POWER

Pout= 51.0dBm at Pin= 44.0dBm

·HIGH GAIN

GL= 11.5dB at Pin= 20.0dBm

·LOW INTERMODULATION DISTORTION

IM3(Min.)= -25dBc at Pout= 44.0dBm

Single Carrier Level

·HERMETICALLY SEALED PACKAGE



RF PERFORMANCE SPECIFICATIONS (Ta= 25°C)

CHARACTERISTICS	SYMBOL	CONDITIONS	UNIT	MIN.	TYP.	MAX.
Output Power	Pout	VDS= 40V IDSset= 0.8A f = 7.7 to 8.5GHz @Pin= 44dBm	dBm	50.0	51.0	—
Drain Current	IDS1		A	—	7.0	9.0
Power Added Efficiency	η_{add}		%	—	36	—
Linear Gain	GL	@Pin= 20dBm	dB	10.5	11.5	—
Gain flatness	ΔG		dB	—	—	± 0.8
3rd Order Intermodulation Distortion	IM3	Two-Tone Test Po= 44.0dBm, Δf = 5MHz (Single Carrier Level)	dBc	-25	-30	—
Drain Current	IDS2		A	—	—	5.0
Channel Temperature Rise *1	ΔT_{ch}		°C	—	120	140

Recommended Gate Resistance(Rg): 28 Ω *1: $\Delta T_{ch} = (VDS \times IDS + Pin(\text{two-tone}) - Po(\text{two-tone})) \times R_{th(c-c)}$

It is calculated using the same condition as IM3 test.

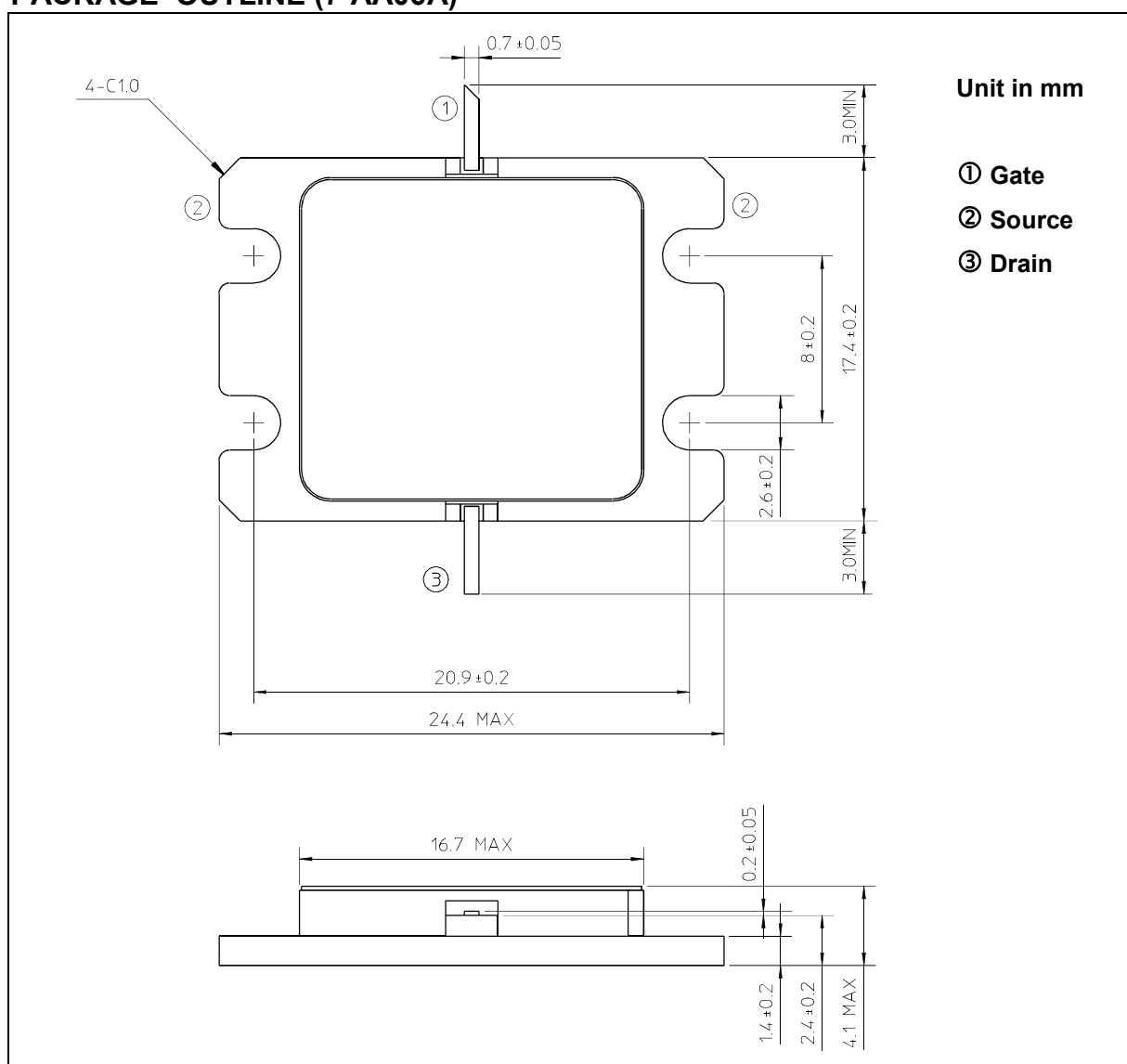
ELECTRICAL CHARACTERISTICS (Ta= 25°C)

CHARACTERISTICS	SYMBOL	CONDITIONS	UNIT	MIN.	TYP.	MAX.
Transconductance	gm	VDS= 5V IDS= 10.0A	S	—	8.0	—
Pinch-off Voltage	VGSoff	VDS= 5V IDS= 30mA	V	-2.0	-3.0	-5.0
Gate-Source Breakdown Voltage	VGSO	IGS= -25mA	V	-10	—	—
Thermal Resistance	Rth(c-c)	Channel to Case	°C/W	—	0.8	1.0

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ABSOLUTE MAXIMUM RATINGS (Ta= 25°C)

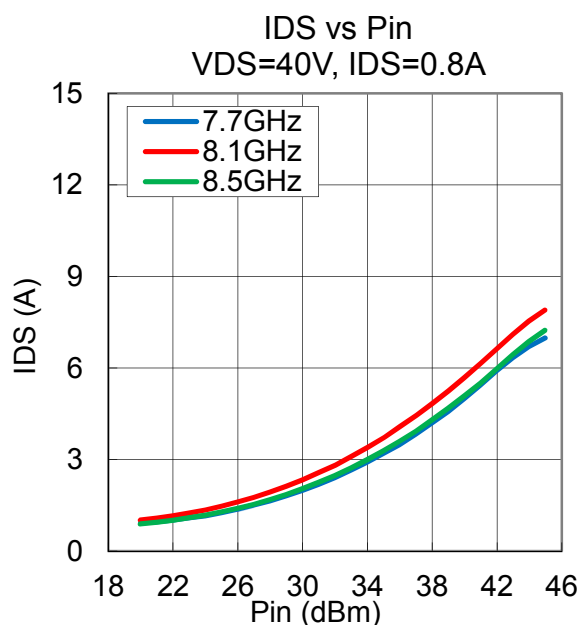
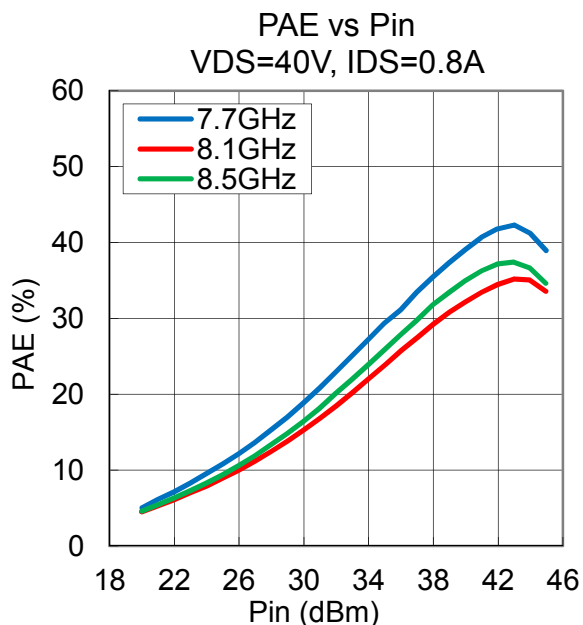
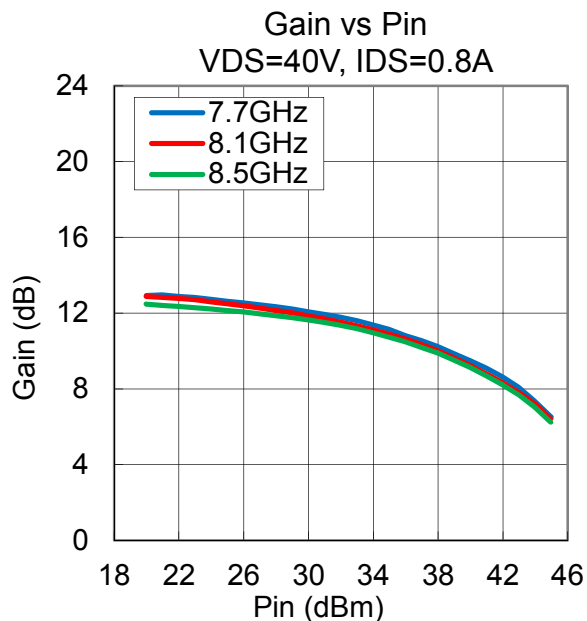
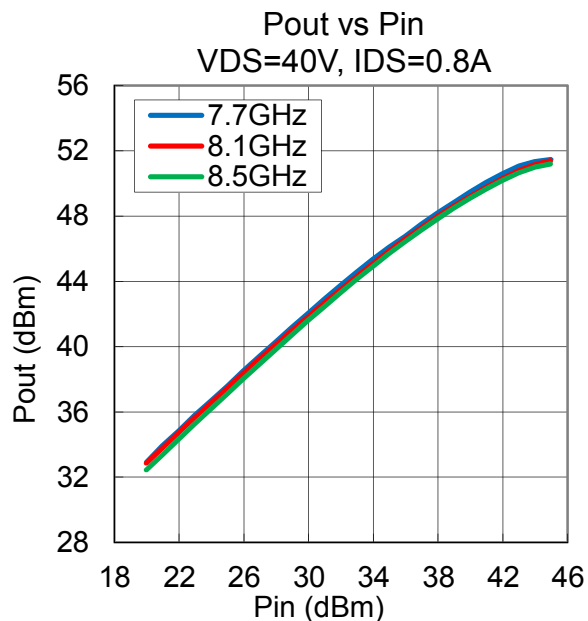
CHARACTERISTICS	SYMBOL	UNIT	RATING
Drain-Source Voltage	VDS	V	50
Gate-Source Voltage	VGS	V	-10
Drain Current	IDS	A	12
Total Power Dissipation (Tc= 25°C)	PT	W	200
Channel Temperature	Tch	°C	225
Storage Temperature	Tstg	°C	-65 to +175

PACKAGE OUTLINE (7-AA06A)

HANDLING PRECAUTIONS FOR PACKAGE MODEL

Soldering iron should be grounded and the operating time should not exceed 10 seconds at 260°C or 3 seconds at 350°C

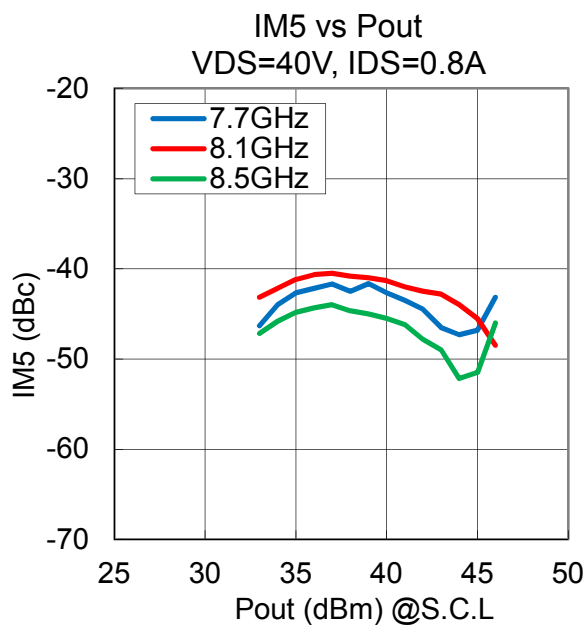
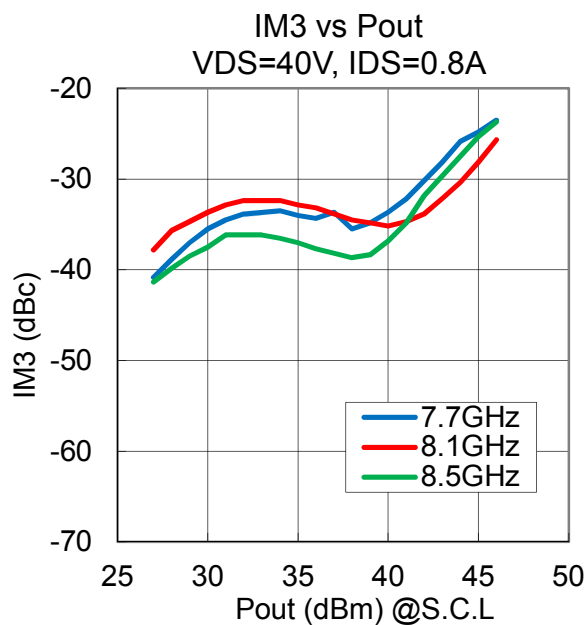
• Pout , Gain , PAE , IDS vs. Pin

VDS= 40 V, IDSset= 0.8 A, f= 7.7, 8.1, 8.5 GHz, Ta= +25 °C



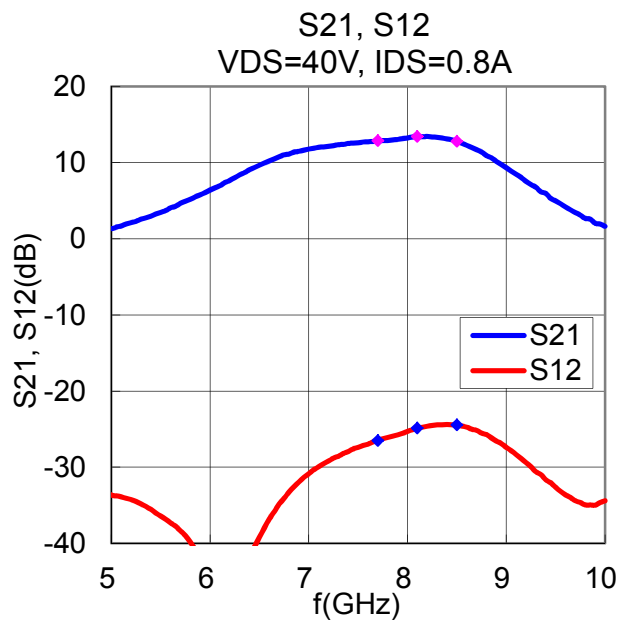
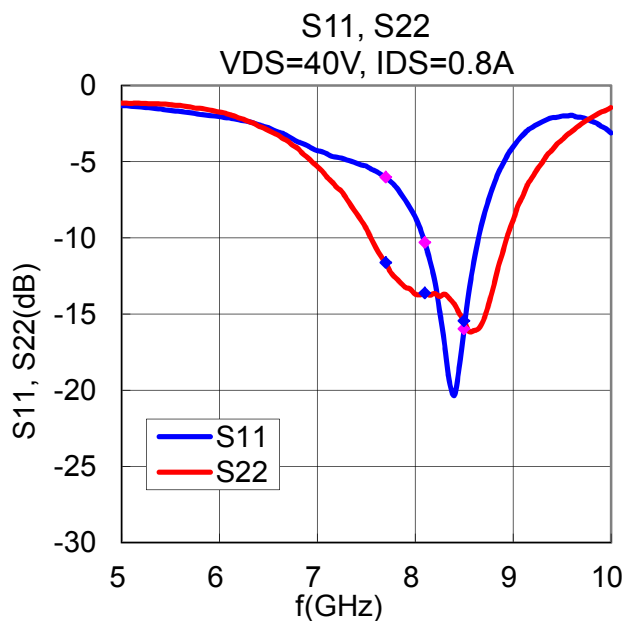
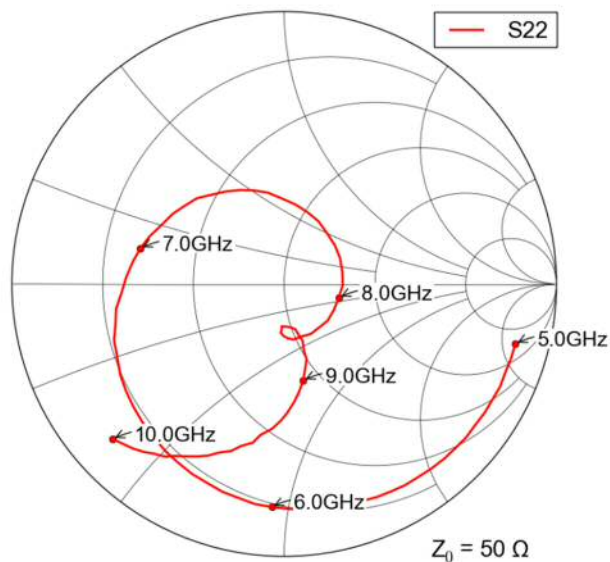
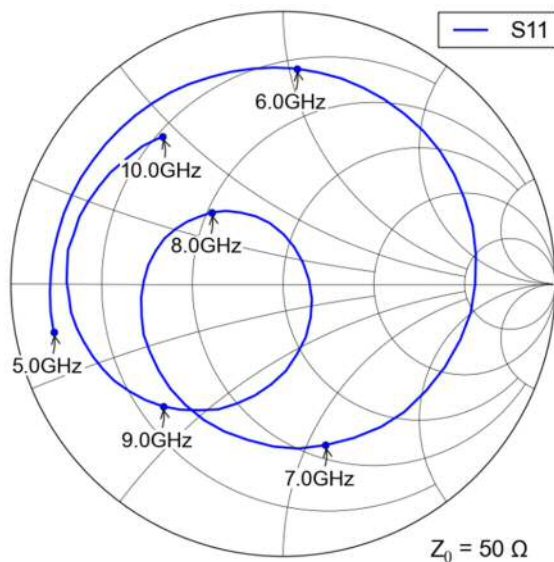
•IM3, IM5 vs. Pout

VDS= 40 V, IDSset= 0.8 A, f= 7.7, 8.1, 8.5 GHz, Δf = 5 MHz, Ta= +25 °C



S-Parameters

$V_{DS} = 40\text{ V}$, $I_{DS\text{set}} = 0.8\text{ A}$, $f = 5.0\text{ to }10.0\text{ GHz}$, $T_a = +25\text{ }^{\circ}\text{C}$



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